UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,765	05/01/2001	Greg Carlson	10003924-1	7792

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AGILENT TECHNOLOGIES
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EXAMINER
PHAM, BRENDA H

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,9, 11-12* is/are rejected.

7)☐ Claim(s) *7,8,10 and 13-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-3, 5-21 are pending in the application.

2.   The indicated allowability of claim 12 is withdrawn in view of the newly discovered reference(s) to Ahmed et al (US 6,816,460 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   Claim 9 and 11 are rejected under 35 U.S.C. 112 as being lack of antecedent basis in the claims.

Claim 1 recites the limitation "the geographic position data" in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "wherein the step of when the depth count ..." in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "proceeding to processing step (a)" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Toh (US

5,987,011).

Claim 1, Toh discloses a method for routing messages in an ad-hoc network

having a plurality of nodes, where each node has a location, where at least one node

can change it location, the method comprising: receiving a message, determining

whether the received message has been encountered recently, **(it is inherent in Toh**

the storing a destination field, a source field and a message identifier field of the

received message for implement the step of check if the received packets have

been previsouly processed by determine the matches of destination field, source

field and message identifier field); when the received message has not been

encountered recently, determining whether the current node is the destination of the

message; when the current node is the destination of the message, processing the

message; and when the current node is not the destination of the message selectively

forwarding the message to another node.

{Referring to FIG. 5a, once the BQ packet 18 has been broadcast by the source

node 20, all neighboring nodes 01, 02, 03, IS1 that receive the packet 18 check if

they have previously processed the BQ packet 18. If affirmative, the BQ packet

18 is discarded, otherwise the neighboring node 10, 02, 03, IS1 checks if it is the

destination node 24. If it is not the destination node 24, the neighboring node 01,

02, 03, IS1 appends it mobile host address 26 at the intermediate node

identification (ID) field of the BQ packet 18 and broadcasts it to its neighbor, col.

8, lines 23-35}.

Toh does not teach forwarding the message to another node by employing the

geographic position data of the current node. This claimed limitation is inherent in Toh.

To discover links, the link information between nodes is known. As the portable device

is moved, the link information changes. Thus it is inherent that the link information is a

geographic position. Even without the teaching of geographic position data in Toh one

skill in the art recognized the mobile will forward the packet based on its current

location. Therefore it is inherent in Toh the step of forwarding the message to another

node by employing a geographic position data of the current node.

7.   Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Ahmed et al

(US 6,816,460 B1).

Claim 12, Ahmed et al discloses a routing system comprising:

a) a position determination module (970 of figure 11) for determining the position

of the current node;

b) a communication mechanism for communicating messages with other nodes

(965 of figure 11);

c) a geographic position dependent routing mechanism (950 of figure 11) for

receiving messages, and the position of the current node, and based thereon for one of

transmitting the message and discarding the message (col. 9, line 1-25 and col. 5, lines

25-30).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

9.   Claims 1, 2, 5-6, 21 are rejected under 35 U.S.C. 103(a) as obvious over Toh

(US 5,987,011) in view of Ahmed et al (US 6,816,460 B1).

Claim 1, Toh discloses a method for routing messages in an ad-hoc network

having a plurality of nodes, where each node has a location, where at least one node

can change it location, the method comprising: receiving a message, determining

whether the received message has been encountered recently, **(it is inherent in Toh**

the storing a destination field, a source field and a message identifier field of the

received message for implement the step of check if the received packets have

been previsouly processed by determine the matches of destination field, source

field and message identifier field); when the received message has not been

encountered recently, determining whether the current node is the destination of the

message; when the current node is the destination of the message, processing the message; and when the current node is not the destination of the message selectively forwarding the message to another node.

{Referring to FIG. 5a, once the BQ packet 18 has been broadcast by the source node 20, all neighboring nodes 01, 02, 03, IS1 that receive the packet 18 check if they have previously processed the BQ packet 18. If affirmative, the BQ packet 18 is discarded, otherwise the neighboring node 10, 02, 03, IS1 checks if it is the destination node 24. If it is not the destination node 24, the neighboring node 01, 02, 03, IS1 appends it mobile host address 26 at the intermediate node identification (ID) field of the BQ packet 18 and broadcasts it to its neighbor, col. 8, lines 23-35}.

Toh do not expressively teach forwarding the message to another node by employing the geographic position data of the current node. Ahmed et al in an ad-hoc mobile network, teach this claimed limitation. Ahmed teach (see figure 2, 4) in an ad-hoc mobile network, a geometry-based routing algorithm (GRA) is used to route traffic from a source node to a destination.

It would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the method of Toh using a geometry-based routing algorithm (GRA) taught by Ahmed et al in Toh to route packet as a function of the shortest distance to the destination.

Regarding claim 2, it is inherent in Toh the step of continues to wait for the arrival

of a message to allow the communication system certain time to wait for arrival of

message.

Regarding claim 3, it is inherent in Toh the step of determining whether the the

received message has been encountered recently included the steps of determining

whether the destination field, the source field, and the message identifier field of the

received message matches with the destination field, source field and message

identifier field of previously received message (see col. 8, lines 23-26, 59-67).

Alternatively, Toh teach "once the BQ packet 18 has been broadcast by the

source node 20, all neighboring nodes 01, 02, 03, IS1 checks if it is the destination node

24....The BQ packet 18 incorporates several fields including a type field 32, which

identifies the type of packet that is being transmitted and allows appropriate

prioritization to be given to its handling. The BQ packet 18 also has a source node

identifier field 34 and a destination node addresses..."

It would have been obvious to those having ordinary skill in the art at the time of

the invention was made to implement the steps of determining whether the destination

field, source field and the message identifier field of the BQ packet 18 matches with the

destination field, source field and message identifier field of the previously received

messages to check if the BQ packet 18 has previously processed thus to prevent

duplicate packet transmission (see also col. 9, line 10).

Regarding claim 5 and 21, Toh teach "once the BQ packet 18 has been broadcast by the source node 20, all neighboring nodes 01, 02, 03, IS1 that receive the packet 18 check if they have previously processed the BQ packet 18. If affirmative, the BQ packet 18 is discarded, otherwise the neighboring node 01, 02, 03, IS1 checks if it is the destination node 24. (col. 8, lines 23-30). It is inherent in Toh the step of comparing a unique address field (destination field) in the received packet with an address of the current node to determine whether the current node is the destination of the message.

Regarding claim 6, as explained in the rejection statement of claim 1 (parent claim) Toh discloses all claim limitation recited in claim. Toh updating the message with the location of the current node; and forwarding the updated message to a next node in the network. (see col. 13, lines 1-22). Toh fails to teach the steps of determining whether the current node is closer in proximity to the destination node than the last node is from the destination node; when the current node is closer in proximity to the destination node than the last node, then Ahmed et al, teach these steps (see figure 4 and 10). It would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the method as taught by Ahmed et al to identify closest node via geometry-based protocol for transmit packet via the shortest path to destination.

Allowable Subject Matter

10.   Claims 7, 8, 10, 13-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11.   Claim 9 and 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rahul Jain et al, "Geographical Routing Using Partial Information for Wireless Ad Hoc Networks", February 2001, IEEE Personal Communications.

Konstantinos N. Amouris et al, "A Position-based multi-zone routing protocol for wide area mobile ad-hoc network, 1999 IEEE.
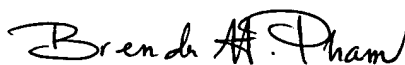
Conclusion

13.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (571) 272-3135. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild, can be reached on (571) 272-2092.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

December 5, 2006
Brenda Pham

BRENDA PHAM
PRIMARY EXAMINER